

WHAT IS CLAIMED IS:

1. An optical sheet which has one surface of its light-transmissive base material on which at least one of a group of plural unit prisms and a group of plural unit lenses is arranged and the other surface of it coated with a coating layer formed out of light-transmissive materials, wherein said coating layer is composed of a light-transmissive resin and light-transmissive fine particles dispersed in said light-transmissive resin, and at least part of said fine particles form a number of fine knoll-shaped projections of 1 to 10 μ m in height projecting from said surface by being projected from the opposite surface of said coating layer to the light-transmissive base material.
2. An optical sheet as defined in claim 1, wherein said coating layer is 2 to 20 μ m in thickness including said fine knoll-shaped projections.
3. An optical sheet as defined in claim 1, wherein said fine knoll-shaped projections are disposed at random along said surface of said coating layer.
4. An optical sheet as defined in claim 1, wherein at least part of said fine particles are composed of light-transmissive beads of 1 to 10 μ m in particle diameter.
5. An optical sheet as defined in claim 1, wherein said fine particles are spherical beads of 1 μ m or less in half bandwidth of the distribution of particle diameters.
6. An optical sheet as defined in claim 1, wherein the ratio of the refractive index of a material forming said fine particles to the refractive index of a light-transmissive resin in said coating layer is 0.9 to 1.1.
7. An optical sheet as defined in claim 1, wherein said coating layer is formed by applying and drying an ink to the reverse surface of said light-transmissive base material, said ink being obtained by mixing with each other said light-transmissive resin and said light-transmissive beads less in specific gravity than said resin, and said fine knoll-shaped projections are formed by projecting said light-transmissive beads from said ink-coated film which has dried and contracted.
8. An optical sheet as defined in claim 1, wherein at least part of fine particles are formed out of light-transmissive beads, and said light-transmissive beads are distributed unevenly more at the opposite surface side of said coating layer to the light-transmissive base material and projected from said opposite surface.
9. An optical sheet as defined in claim 8, wherein said coating layer is formed by applying an ink obtained by mixing with each other said light-transmissive resin and said light-transmissive beads less in specific gravity than said resin to the reverse surface of said light-

transmissive base material so as to be pressed by gravity, and by hardening the ink after said light-transmissive beads come to be distributed unevenly more in the vicinity of the surface after the ink has been applied.

10. An optical sheet which has one surface of its light-transmissive base material on which at least one of a group of plural unit prisms and a group of plural unit lenses is arranged and the other surface of it coated with a coating layer formed out of light-transmissive materials, wherein said coating layer is composed of a light-transmissive resin and light-transmissive beads which are dispersed in said light-transmissive resin, 1 to 10 μ m in particle diameter and 1 μ m or less in half bandwidth of the distribution of particle diameters, and at least part of said light-transmissive beads are projected from the opposite surface of said coating layer to the light-transmissive base material and thereby many fine knoll-shaped projections of 1 to 10 μ m in height projecting from said surface are formed and said coating layer is formed to be 2 to 20 μ m in thickness including said fine knoll-shaped projections, and the ratio of the refractive index of a material forming said light-transmissive beads to the refractive index of the light-transmissive resin in the coating layer is 0.9 to 1.1.

11. An optical sheet as defined in claim 10, wherein said light-transmissive beads are distributed unevenly more at the opposite surface side of said coating layer to the light-transmissive base material and projected from said opposite surface.

12. An optical sheet having a light-transmissive base material having one surface having a light diffusing layer and the other surface covered with a coating layer formed out of a light-transmissive material, said coating layer comprising light-transmissive spherical beads of 1 μ m or less in half bandwidth of the distribution of particle diameters.

13. An optical sheet as defined in claim 12, wherein said light diffusing layer is formed so as to contain light-transmissive beads, and the average particle diameter of the light-transmissive spherical beads in said light diffusing layer is made larger than the average particle diameter contained in said coating layer.

14. An optical sheet as defined in claim 12, wherein the spherical beads contained in said coating layer are 1 to 10 μ m in particle diameter.

15. An optical sheet lamination which is formed by laminating together plural optical sheets containing unit prisms or unit lenses, wherein each optical sheet has plural unit prisms or unit lenses arranged on one surface of a light-transmissive base material and the other surface being covered with a coating layer formed out of a light-transmissive material, said coating layer contains light-transmissive spherical beads of 1 μ m or less in half bandwidth of the

distribution of particle diameters, and said coating layer in the laminated optical sheet is in contact with unit prisms or unit lenses on an adjacently laminated optical sheet.

16. An optical sheet lamination as defined in claim 15, wherein the vertical angle of the tops of the prisms or lenses on another optical sheet in contact with the coating layer is as sharp as in 100° or less.

17. An optical sheet lamination which is formed by laminating together one or more optical sheets each of which has a light-transmissive base material having one surface having a light diffusing layer and the other surface covered with a coating layer formed out of a light-transmissive material, said coating layer contains light-transmissive spherical beads of $1\ \mu\text{m}$ or less in half bandwidth of the distribution of particle diameters, and one or more optical sheets each of which has plural unit prisms or plural unit lenses arranged on the surface of a light-transmissive base material, wherein said coating layer in an laminated optical sheet is in contact with unit prisms or unit lenses on another optical sheet laminated adjacently to said laminated optical sheet.

18. An optical sheet lamination as defined in claim 17, wherein the vertical angle of the tops of the prisms or lenses on another optical sheet in contact with the coating layer is as sharp as in 100° or less.

19. A surface light source device composed of a light source for outputting light from its light outputting surface and an optical sheet provided adjacently to said light outputting surface, said optical sheet having one surface of a light-transmissive base material on which at least one of a group of plural unit prisms and a group of plural unit lenses is arranged and the other surface being covered with a coating layer formed out of light-transmissive materials, wherein said coating layer is composed of a light-transmissive resin and light-transmissive fine particles dispersed in said light-transmissive resin, and at least part of said fine particles are formed into many fine knoll-shaped projections of 1 to $10\ \mu\text{m}$ in height projecting from said surface by being projected from the opposite surface of said coating layer to the light-transmissive base material.

20. A surface light source device as defined in claim 19, wherein said coating layer is 2 to $20\ \mu\text{m}$ in thickness including said fine knoll-shaped projections.

21. A surface light source device as defined in claim 19, wherein at least part of said fine particles are light-transmissive beads of 1 to $10\ \mu\text{m}$ in particle diameter.

22. A surface light source device as defined in claim 19, wherein said fine particles of the coating layer in said optical sheet are spherical beads of $1\ \mu\text{m}$ or less in half bandwidth of the distribution of particle diameters.
23. A surface light source device as defined in claim 19, wherein the ratio of the refractive index of a material forming said fine particles to the refractive index of a light-transmissive resin in the coating layer is 0.9 to 1.1.
24. A surface light source device as defined in claim 19, wherein at least one lens sheet which has one surface of a light-transmissive base material on which at least one of a group of plural unit prisms and a group of plural unit lenses is arranged and the other surface being made flat and smooth without raggedness by being covered with a coating layer formed out of a light-transmissive material is put between said optical sheet and said light outputting surface.
25. A surface light source device as defined in claim 19, wherein said light source is composed of a light guide means which is a plate-shaped member one of whose surfaces is said light outputting surface and which outputs a light introduced through at least one side end surface from said light outputting surface, and a light generating source for inputting light into said light guide means through at least said one side end face of said light guide means.
26. A surface light source device as defined in claim 19, wherein a light diffusing sheet is disposed on the light outputting surface of said light source and the light outputted through said light diffusing sheet from said light outputting surface is inputted from said coating layer side.
27. A surface light source device as defined in claim 19, wherein at least part of said fine particles are formed out of light-transmissive beads, and said light-transmissive beads are distributed unevenly more at the opposite surface side of said coating layer to the light-transmissive base material and are formed into many fine knoll-shaped projections by being projected from said surface.
28. A surface light source device as defined in claim 19, wherein the vertical angle of the tops of the prisms or lenses on another optical sheet in contact with the coating layer is as sharp as in 100° or less.
29. A surface light source device composed of a light source for outputting light from its light outputting surface and an optical sheet provided adjacently to said light outputting surface, said optical sheet having one surface of a light-transmissive base material on which at least one of a group of plural unit prisms and a group of plural unit lenses is arranged and

the other surface being covered with a coating layer formed out of light-transmissive materials, wherein said coating layer comprises light-transmissive spherical beads of $1\ \mu\text{m}$ or less in half bandwidth of the distribution of particle diameters and the light outputted from said light outputting surface is inputted from said coating layer side.

30. A surface light source device as defined in claim 29, wherein said light diffusing layer comprises light-transmissive spherical beads, and the average particle diameter of the light-transmissive spherical beads in said light diffusing layer is larger than the average particle diameter of the spherical beads contained in said coating layer.

31. A surface light source device as defined in claim 29, wherein the spherical beads contained in said coating layer are 1 to $10\ \mu\text{m}$ in particle diameter.

32. A surface light source device as defined in claim 29, wherein the vertical angle of the tops of the prisms or lenses on another optical sheet in contact with the coating layer is as sharp as in 100° or less.

33. A surface light source device composed of a light source for outputting light from its light outputting surface and an optical sheet provided adjacently to said light outputting surface, said optical sheet having one surface of a light-transmissive base material on which at least one of a group of plural unit prisms and a group of plural unit lenses is arranged and the other surface being covered with a coating layer formed out of light-transmissive materials, wherein said coating layer contains light-transmissive beads, dispersed in said light-transmissive resin, of 1 to $10\ \mu\text{m}$ in particle diameter and $1\ \mu\text{m}$ or less in half bandwidth of the distribution of particle diameters, and at least part of said light-transmissive beads are formed into many fine knoll-shaped projections of 1 to $10\ \mu\text{m}$ in height projecting from the opposite surface of said coating layer to the light-transmissive base material by being projected from said opposite surface, and said coating layer is 2 to $20\ \mu\text{m}$ in thickness including said fine knoll-shaped projections, and the ratio of the refractive index of a material forming said light-transmissive beads to the refractive index of the light-transmissive resin in the coating layer is 0.9 to 1.1.

34. A surface light source device as defined in claim 33, wherein said light-transmissive beads are distributed unevenly more at the opposite surface side of said coating layer to the light-transmissive base material and projected from said surface.

35. A surface light source device as defined in claim 33, wherein the vertical angle of the tops of the prisms or lenses on another optical sheet in contact with the coating layer is as sharp as in 100° or less.

36. A light-transmissive type display apparatus composed of a flat light-transmissive display means and a surface light source device which is disposed at the back of said light-transmissive display means and irradiates said light-transmissive display means from the back with its output light, wherein said surface light source device is composed of a light source for outputting light from its light outputting surface and an optical sheet provided adjacently to said light outputting surface, said optical sheet having one surface of a light-transmissive base material on which at least one of a group of plural unit prisms and a group of plural unit lenses is arranged and the other surface being covered with a coating layer formed out of light-transmissive materials, and light-transmissive fine particles different from a material for the coating layer are disposed on the opposite surface of said coating layer to the light-transmissive base material and thereby many fine knoll-shaped projections of 1 to 10 μm in height projecting from said surface are formed, and the light outputted from said light outputting surface is inputted from said coating layer side.

37. A light-transmissive type display apparatus as defined in claim 36, wherein said coating layer in said optical sheet is 2 to 20 μm in thickness including said fine knoll-shaped projections.

38. A light-transmissive type display apparatus as defined in claim 36, wherein at least part of said fine particles in said optical sheet are light-transmissive beads of 1 to 10 μm in particle diameter.

39. A light-transmissive type display apparatus as defined in claim 36, wherein said fine particles of the coating layer in said optical sheet are spherical beads of 1 μm or less in half bandwidth of the distribution of particle diameters.

40. A light-transmissive type display apparatus as defined in claim 36, wherein the ratio of the refractive index of a material forming said fine particles in said optical sheet to the refractive index of the light-transmissive resin in the coating layer is 0.9 to 1.1.

41. A light-transmissive type display apparatus as defined in claim 36, wherein at least one lens sheet which has one surface of a light-transmissive base material on which at least one of a group of plural unit prisms and a group of plural unit lenses is arranged and the other surface being made flat and smooth without raggedness by being covered with a coating layer of a light-transmissive material is put between said optical sheet and said light outputting surface in said surface light source device.

42. A light-transmissive type display apparatus as defined in claim 36, wherein said light source in said surface light source device is composed of a light guide means which is a plate-

shaped member, formed out of a light-transmissive material, having one surface of it as said light outputting surface and outputs a light inputted from at least one side end surface through said light outputting surface, and a light generating source for inputting light from at least said one side end surface of said light guide means into it.

43. A light-transmissive type display apparatus as defined in claim 36, comprising a light diffusing sheet on the light outputting surface of said light source in it, wherein a light outputted through said light diffusing sheet from said light outputting surface is inputted from said coating layer side.

44. A light-transmissive type display apparatus as defined in claim 36, wherein at least part of said fine particles in said optical sheet are formed out of light-transmissive beads, and said light-transmissive beads are distributed unevenly more at the opposite surface side of said coating layer to the light-transmissive base material, and formed into said many fine knoll-shaped projections by being projected from said surface.

45. A light-transmissive type display apparatus as defined in claim 36, wherein said vertical angle of the tops of the prisms or lenses on another optical sheet in contact with the coating layer is as sharp as in 100° or less.

46. A light-transmissive type display apparatus provided with a flat light-transmissive display means and a surface light source device which is disposed at the back of said light-transmissive display means and irradiates said light-transmissive display means from the back with its output light, wherein said surface light source device is composed of a light source for outputting light from its light outputting surface and an optical sheet provided adjacently to said light outputting surface, wherein said optical sheet has one surface of a light-transmissive base material on which a light diffusing sheet is provided and the other surface being covered with a coating layer of a light-transmissive material, and said coating layer contains light-transmissive spherical beads of $1\ \mu\text{m}$ or less in half bandwidth of the distribution of particle diameters, and at least part of these spherical beads are projected from the opposite surface of said coating layer to the light-transmissive base material and are formed into many fine knoll-shaped projections of 1 to $10\ \mu\text{m}$ in height projecting from said surface, and the light outputted from said light outputting surface is inputted from said coating layer side.

47. A light-transmissive type display apparatus as defined in claim 46, wherein said light diffusing layer in said optical sheet contains light-transmissive spherical beads, and the average particle diameter of the light-transmissive spherical beads in said light diffusing layer

is made larger than the average particle diameter of the spherical beads contained in said coating layer.

48. A light-transmissive type display apparatus as defined in claim 46, wherein said spherical beads contained in said coating layer in said optical sheet are 1 to 10 μ m in particle diameter.

49. A light-transmissive type display apparatus as defined in claim 46, wherein the vertical angle of the tops of the prisms or lenses on another optical sheet in contact with the coating layer is as sharp as in 100° or less.

50. A light-transmissive type display apparatus provided with a flat light-transmissive display means and a surface light source device which is disposed at the back of said flat light-transmissive display means and irradiates said light-transmissive display means from the back with its output light, wherein said surface light source device is composed of a light source for outputting light from its light outputting surface and an optical sheet provided adjacently to said light outputting surface, said optical sheet has one surface of a light-transmissive base material on which at least one of a group of plural unit prisms and a group of plural unit lenses is arranged and the other surface being covered with a coating layer formed out of light-transmissive materials, said coating layer is composed of a light-transmissive resin and light-transmissive beads which are dispersed in said light-transmissive resin and are 1 to 10 μ m in particle diameter and 1 μ m or less in half bandwidth of the distribution of particle diameters, and at least part of said light-transmissive beads are formed into many fine knoll-shaped projections of 1 to 10 μ m in height projecting from the opposite surface of said coating layer to the light-transmissive base material by being projected from said surface, and said coating layer is 2 to 20 μ m in thickness including said fine knoll-shaped projections, and the ratio of the refractive index of a material forming said light-transmissive beads to the refractive index of the light-transmissive resin in said coating layer is 0.9 to 1.1.

51. A light-transmissive type display apparatus as defined in claim 50, wherein said light-transmissive beads in said optical sheet are distributed unevenly more at the opposite surface side of said coating layer to the light-transmissive base material and are projected from said surface.

52. A light-transmissive type display apparatus as define in claim 50, wherein the vertical angle of the tops of the prisms or lenses on another optical sheet in contact with the coating layer is as sharp as in 100° or less.